TO PLOT $ax^2 + bx + c = 0$.

By J. L. Patterson.

$x = -b/2a \pm \sqrt{(b^2 - 4ac)}/2a$, which may be written $x = -(b/2a) \pm k$, from which it is evident that $x = -b/2a$ is the equation of the axis of the curve, and if $-(b/2a)$ be substituted for x in the equation $ax^2 + bx + c = y$, the value of y thus found will give the intersection of the curve with the axis of the curve, that is the lowest (or if ax^2 be negative, the highest) point of the curve. *Thus the two most important characteristics of the curve, viz., the axis and the highest or lowest point are determined at the outset in a very simple manner.*

For example take the equation $x^2 - 3x - 18 = 0$. Use the equation of the axis $x = -(b/2a) = \frac{3}{2} = 1\frac{1}{2}$, which gives the axis of the curve, and if $\frac{3}{2}$ be substituted for x in the equation $x^2 - 3x - 18 = y$, we find $y = -20\frac{1}{4}$ which gives C the intersection of the curve with the axis of the curve, or the lowest point on the curve, and thus the two most important characteristics of the curve are known.

If $x = 0$, $y = -18$, as usual, which gives the point D and the symmetric point D' is at once known. The solution of the equation gives $x = 6$ or -3 which gives the points E' and E as usual, and we have five points which would be sufficient for a rough plot. But we know the axis and the lowest point which are of vital importance.

If the curve does not cut the axis of x this method gives only three points but other points may be found in the usual manner, if necessary, which would seldom be the case.

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